

Remarks

Receipt is acknowledged of the Office Action mailed June 1, 2004. Claims 1-9 are pending. Claims 1, 5, 8 and 9 have been amended. Claims 6 and 7 have been cancelled without prejudice or disclaimer. No new matter has been introduced. Thus, claims 1-5, 8 and 9 are submitted for reconsideration at this time.

Applicants thank the Examiner for acknowledging Applicants' claim for foreign priority, and consideration of the submitted Oath/Declaration.

In the Specification

The title of the invention is objected to as not being descriptive. Applicants have amended the title accordingly to recite "Method For Preventing Out-Diffusion of Impurities Implanted in Source/Drain Regions When Forming Transistor of Semiconductor Device". Withdrawal of the objection to the title is solicited.

Applicants have also amended the specification to correct minor typographical errors. No new matter has been introduced.

Claim Objections

Claim 1 is objected to due to the presence of a typographical error. Applicants have amended claim 1 accordingly. Withdrawal of the objection to claim 1 is solicited.

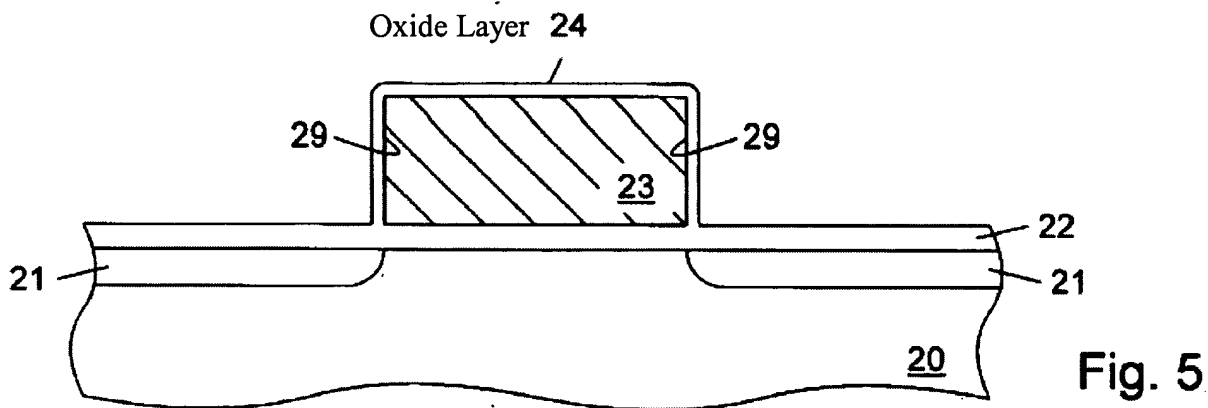
Rejections under 35 USC § 112, ¶2

Claims 1-9 stand rejected under 35 USC § 112, ¶2 as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Specifically, claim 1 recites the limitation "the resulting structure" in line 8, for which there is allegedly insufficient antecedent basis. Applicants have amended claim 1 accordingly. Withdrawal of the rejection under 35 USC § 112, ¶2 is solicited.

Rejections under 35 USC § 102(b)

Claims 1 and 6 stand rejected under 35 USC § 102(b) as being anticipated by U.S. Patent No. 6,144,071 ("Gardner" hereafter). Claim 6 has been cancelled without prejudice or disclaimer. Applicants respectfully traverse the rejection of claim 1 for at least the following reasons.

As shown in Figure 5 (reproduced below for the Examiner's convenience), Gardner discloses a substrate with a thin oxide layer 24 deposited over gate conductor 23 (Gardner 9:10-12). Gardner teaches that oxide layer 24 may be deposited using techniques such as LPCVD at substrate temperatures in a range from about 650° C to about 900° C and PECVD at substrate temperatures from about 200 °C to about 400° C (Gardner 9:15-18).



While Gardner discloses a LPCVD and PECVD oxide deposition technique, Gardner fails to disclose or suggest *performing thermal treatment of the substrate at a temperature ranging from 600° C to 700° C under a nitrogen gas atmosphere if the oxide film is formed at a temperature below 600° C* as presently claimed. Support for this amendment can be found, for example, from pg. 6, line 24-pg.7, line 8 of the as-filed specification. Such a process improves the characteristics and reliability of devices formed according to the claimed method.

In contrast to the claimed thermal treatment, Gardner discloses a thermal process 201 which heats the substrate in an NH₃ ambient at a temperature between about 850° C and 1100° C to convert a silicon layer 25 into a dielectric layer 26 (Gardner 9:34-54). Such a thermal process 201 differs from that of the presently claimed invention both in its object and temperature.

As Gardner fails to disclose or suggest the claimed thermal treatment, it cannot anticipate the presently claimed invention. Withdrawal of the rejection under 35 USC § 102(b) is solicited.

Rejections under 35 USC § 103(a)

Claims 2-5 and 7-9 stand rejected under 35 USC § 103(a) as being unpatentable over Gardner in view of U.S. Patent No. 6,589,849 ("Kadosh" hereafter). Applicants respectfully traverse this rejection for at least the following reasons.

Claims 2-5 are dependent upon claim 1, and are considered to be allowable for at least the aforementioned reasons discussed in reference to claim 1 in addition to the further patentable features recited therein.

Claim 7 has been cancelled without prejudice or disclaimer.

Claims 8 and 9 have been amended to depend upon claim 1, and are considered to be allowable for at least the aforementioned reasons discussed in reference to claim 1 in addition to the further patentable features recited therein.

In view of the aforementioned reasons, claims 2-5, 8 and 9 are considered to be in condition for allowance. Applicants further submit that Kadosh fails to rectify the noted deficiencies in Gardner. Withdrawal of the rejection under 35 USC § 103(a) is solicited.

CONCLUSION

In view of the above amendment and remarks, Applicants respectfully request that all objections and rejections be withdrawn and that a notice of allowance be forthcoming. The Examiner is invited to contact the undersigned representative for Applicants for any reason related to the advancement of this case.

Respectfully submitted,

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Heller Ehrman White & McAuliffe LLP
1666 K Street, N.W., Suite 300
Washington, D.C. 20006-4004
Telephone: (202) 912-2510
Facsimile: (202) 912-2020



Daniel L. Girdwood
Agent for Applicant
Reg. No.: 52,947

Customer No. 26633